(12) UK Patent Application (19) GB (11) 2 365 266 (13) A

(43) Date of A Publication 13.02.2002

(21) Application No 0018451.5

(22) Date of Filing 27.07.2000

(51) INT CL[7]
H04Q 7/32

(52) UK CL (Edition T)
H4L LECY LRAD

(56) Documents Cited
GB 2348575 A
WO 98/47300 A1
FR 002762739 A
EP 0849965 A1
WO 94/17639 A

(58) Field of Search
UK CL (Edition S) H4L LECCX LECY LRAD LRAX
INT CL[7] H04B 1/38 , H04M 1/72 1/725 , H04Q 7/32
ONLINE: WPI, PAJ, EPODOC

(71) Applicant(s)
E-Lead Electronic Co Ltd
(Incorporated in Taiwan)
No. 52 Lane 563, Chang-Tsao Road, Chang-Hua,
Taiwan

(72) Inventor(s)
Stephen Chen

(74) Agent and/or Address for Service
Eric Potter Clarkson
Park View House, 58 The Ropewalk, NOTTINGHAM,
NG1 5DD, United Kingdom

(54) Abstract Title
Fixed telephone structurally adapted for use of cellular phones

(57) Due to health concerns associated with the use of cellular phones, it may be preferable to hold conversations over a wired telephone than a cellular device. A fixed line telephone 1 is adapted to allow docking of a cellular telephone 3. A call detecting unit is able to detect an incoming call on a fixed line or through the cellular phone, and switches operation to receive the incoming call so that the fixed line telephone may be used to answer both fixed line and cellular calls. Dialling operations on the fixed phone may be converted to dialling operations on the cellular phone. Also, when not in use, the battery of the cellular phone may be charged by the fixed line phone. The fixed line telephone may be a cordless telephone.

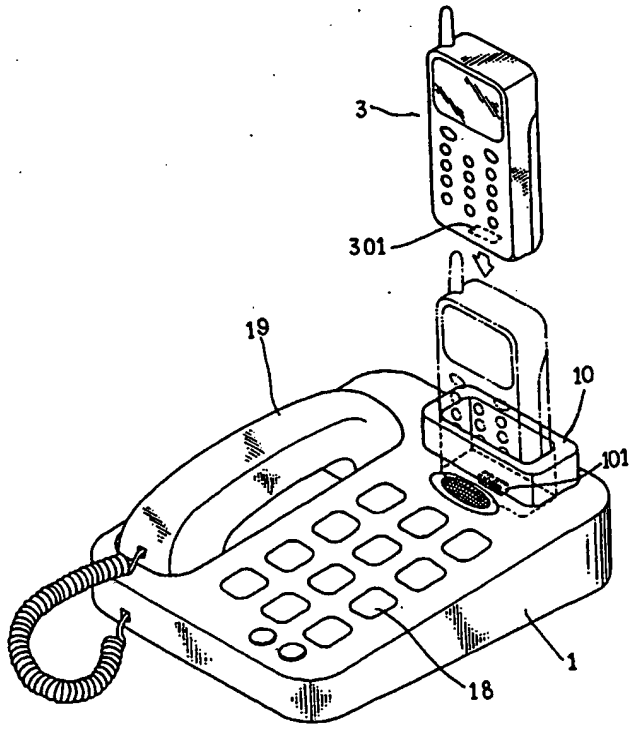

FIG.1

GB 2 365 266 A

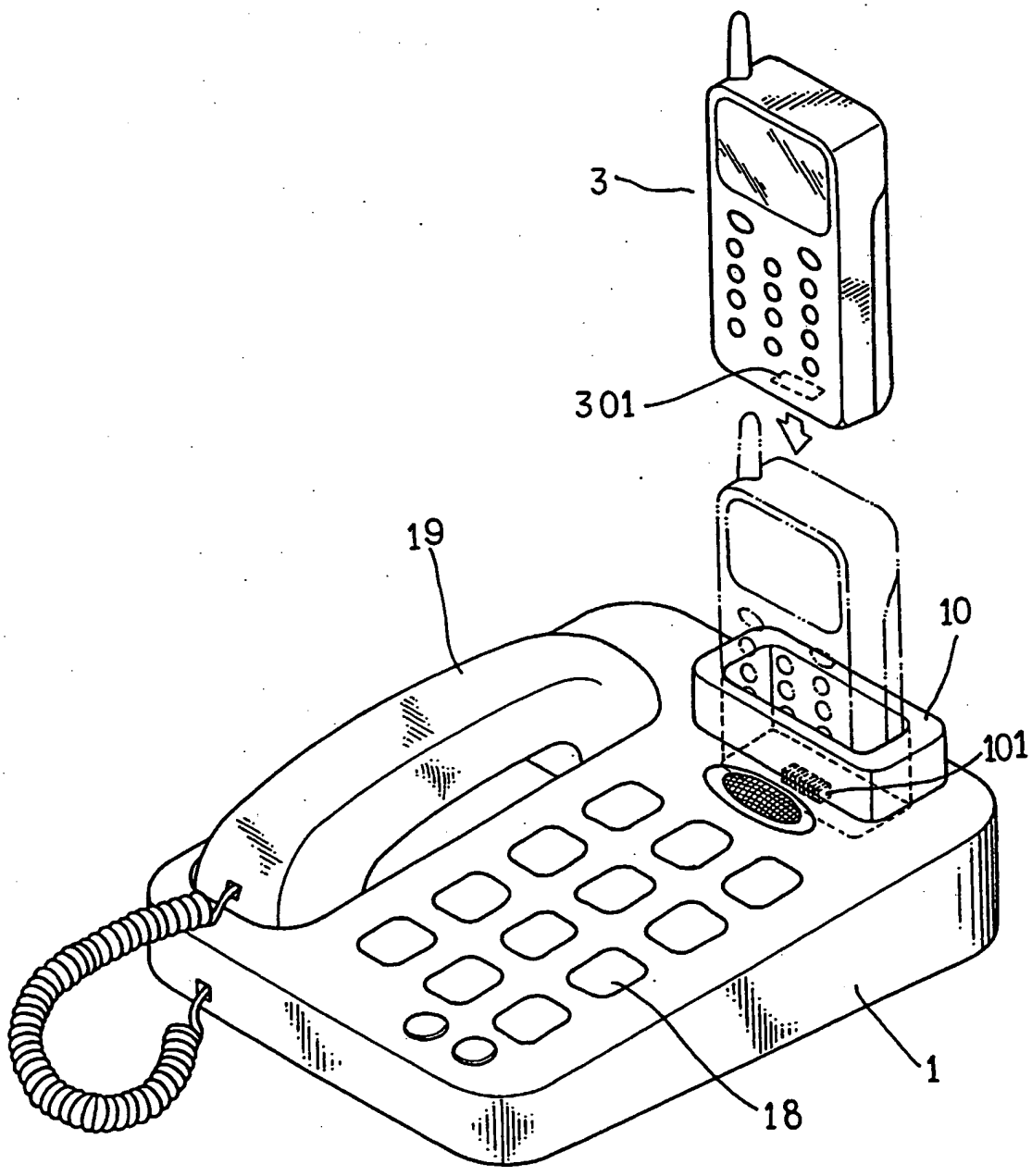

FIG.1

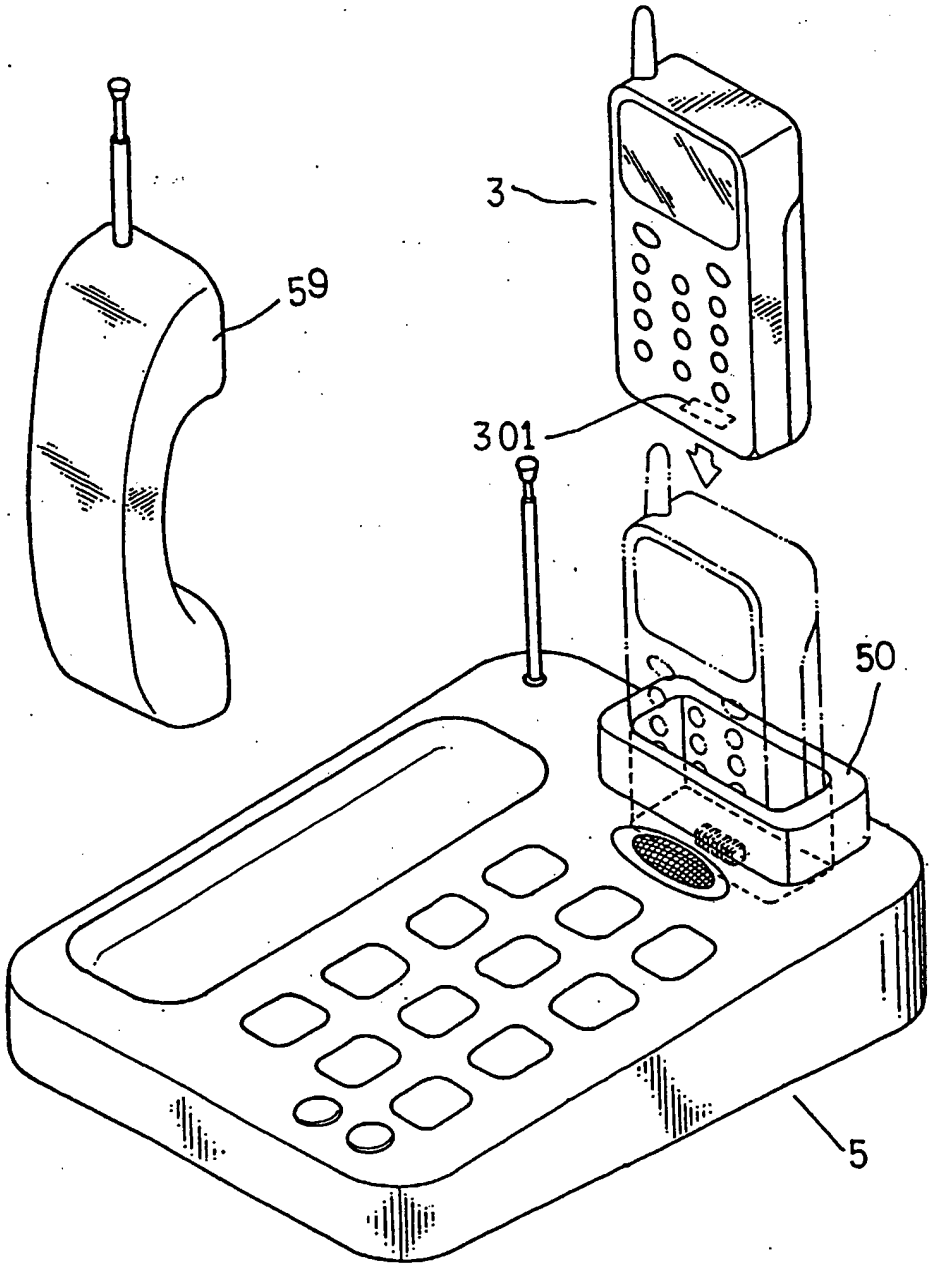

FIG. 2

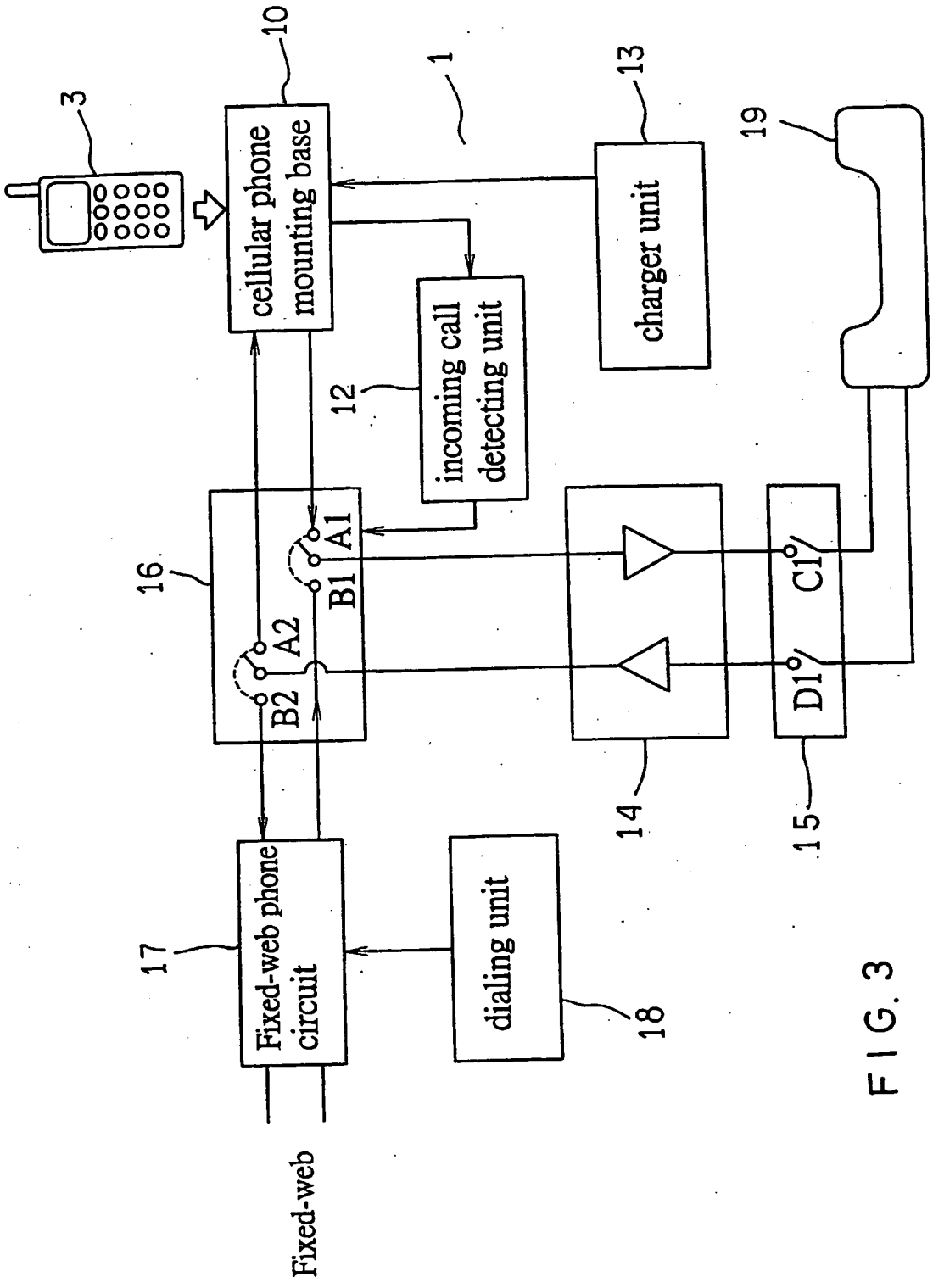
3
10
cellular phone mounting base
1
13
charger unit
19
12
incoming call detecting unit
16
A1
B1
A2
B2
C1
D1
14
15
17
Fixed-web phone circuit
dialing unit
18
Fixed-web

FIG. 3

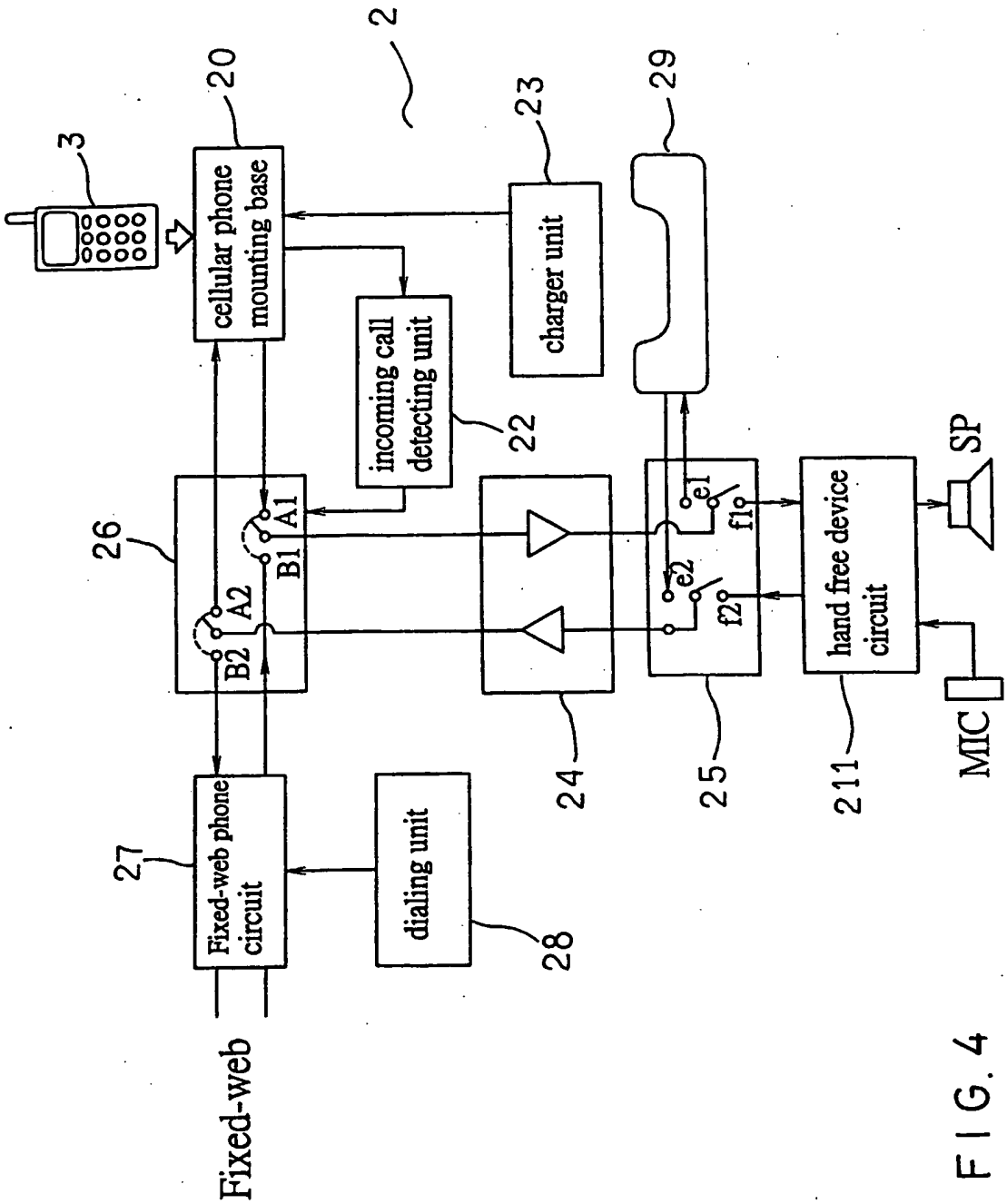
2
3
20
cellular phone mounting base
23
charger unit
29
incoming call detecting unit
22
26
A1
B1
A2
B2
24
e1
f1
e2
f2
25
hand free device circuit
211
SP
MIC
27
Fixed-web phone circuit
dialing unit
28
Fixed-web

FIG. 4

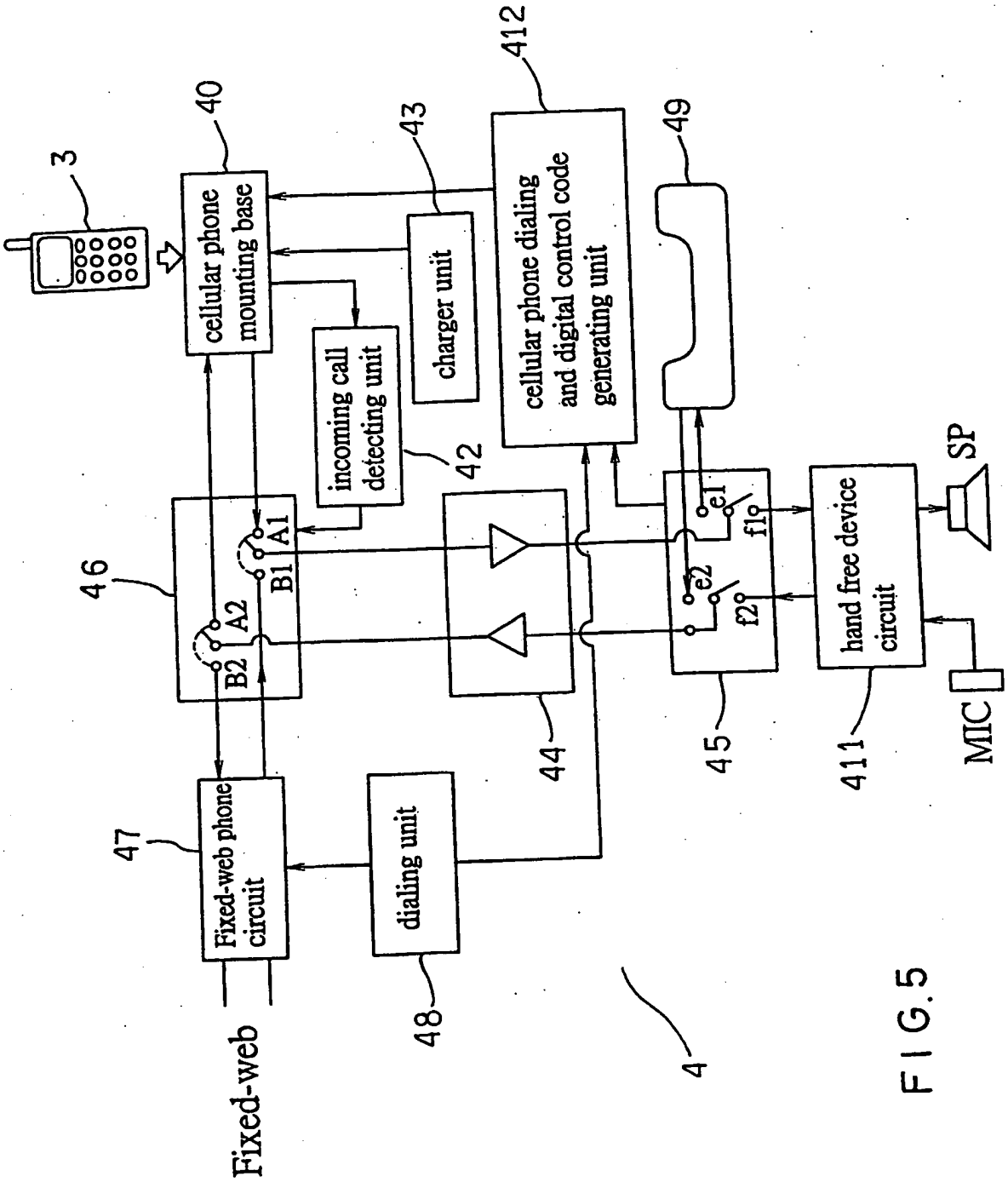
3
40
cellular phone mounting base
43
charger unit
412
cellular phone dialing and digital control code generating unit
49
incoming call detecting unit
42
46
A1
B1
A2
B2
e1
f1
e2
f2
SP
MIC
hand free device circuit
411
45
44
47
Fixed-web phone circuit
dialing unit
48
Fixed-web
4

FIG.5

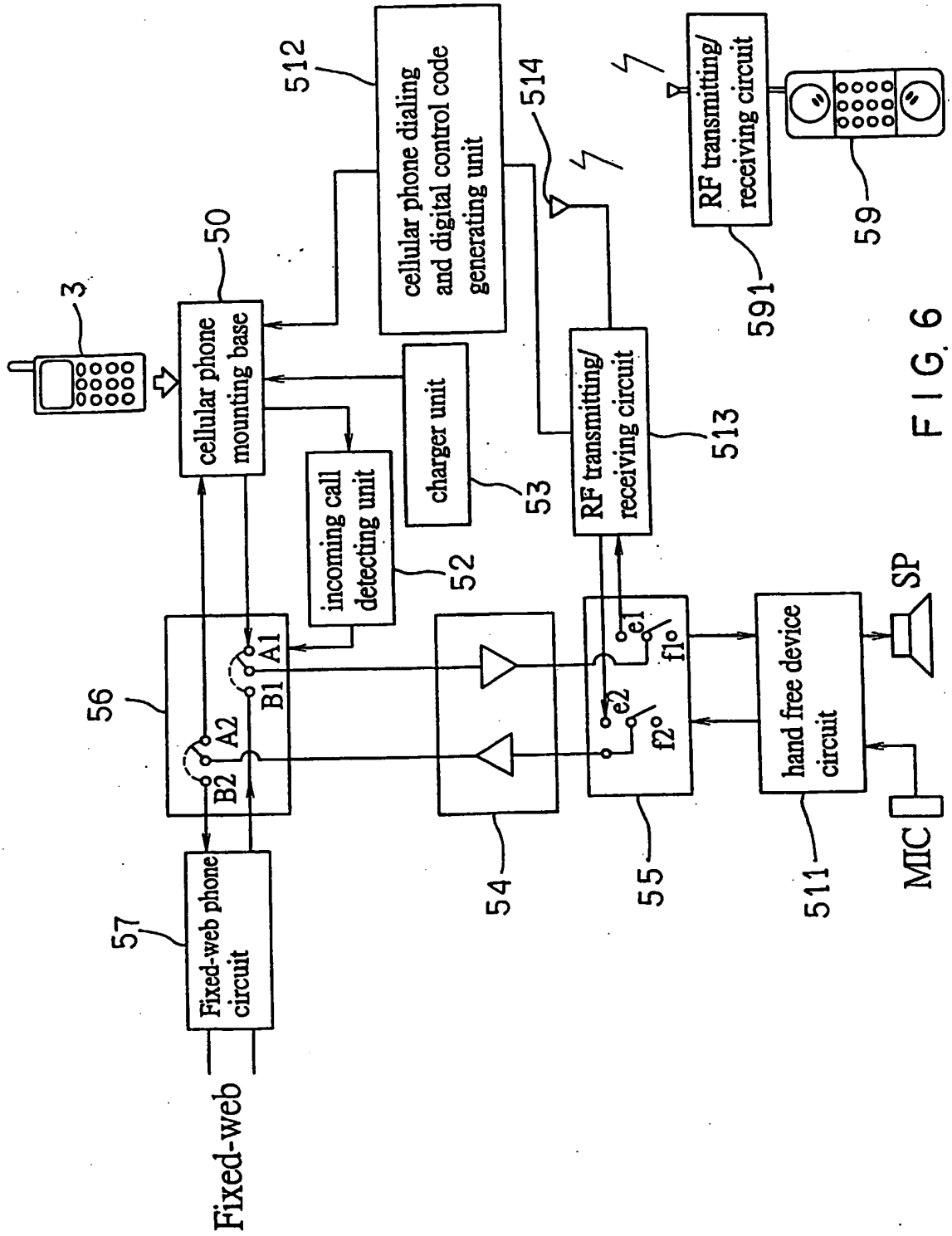
3
50
cellular phone mounting base
512
cellular phone dialing and digital control code generating unit
514
RF transmitting/ receiving circuit
591
59
charger unit
53
incoming call detecting unit
52
513
56
A1
B1
A2
B2
54
55
e1
f1
e2
f2
hand free device circuit
SP
MIC
511
57
Fixed-web phone circuit
Fixed-web

FIG. 6

FIXED-WEB TELEPHONE STRUCTURALLY ADAPTABLE FOR COMMON USE OF CELLULAR PHONES

BACKGROUND OF THE INVENTION

The present invention relates to a fixed-web telephone structurally adaptable for common use of cellular phones, and more particularly to a fixed-web telephone which can transform a cellular phone call into a communication via the fixed-web telephone. It mainly includes a cellular phone mounting base, a charger unit, an incoming call detecting unit, a fixed-web phone/cellular phone switching unit, a fixed-web phone circuit, an acoustic frequency signal amplifying unit, a phone picking up/hanging up device, a phone receiver and a dialing unit. By way of connection of the above components to one another, a cellular phone call can be converted into communication via the fixed-web telephone in one aspect and the battery of a stand-by cellular phone can be automatically charged in another aspect.

Cellular phones have been widely and popularly used by people in modern cities all over the world because they make instant communication possible at any places and any time, facilitating people in everyday life. However, the frequency use of cellular phones do cause bad effect on people's health, especially microwaves can cause people's brains damaged without notice. So, the use of cellular phones brings

crisis to people's health. In such a situation, people aware of the danger of using cellular phones try to reduce the frequency of use of cellular phones indoors, they will use cellular phones only outdoors. But many important personal contacts are generally made via cellular phones at homes or in offices, and turning off cellular phones can cause personal communication inconvenient. In that case, people are forced to make use of cellular phones all the time even inside houses with common telephones. To make cellular phones adapted to be operable on an indoor fixed-web telephone, such as at homes and in offices, has been a major concern by people. Such a fixed-web telephone can transform cellular phone calls into communication via the fixed-web telephone.

SUMMARY OF THE INVENTION

Therefore, the primary object of the present invention is to provide a fixed-web telephone structurally adaptable for transforming a cellular phone call into communication via the fixed-web telephone or vice versa whereby people can be better protected from being physically influenced by microwaves produced by cellular phones by reducing the frequency of use of cellular phones.

Another object of the present invention is to provide a fixed-web telephone

structurally adaptable for common use of cellular phones, which can charge a battery of a stand-by cellular phone.

BRIEF DESCRIPTION OF THE DRAWINGS

Fig. 1 is a diagram showing a first operation mode of the present invention applied to a cellular phone;

Fig. 2 is a diagram showing another operation mode of the present invention applied to a cellular phone;

Fig. 3 is a block diagram of the first embodiment of the present invention;

Fig. 4 is a block diagram of the second embodiment of the present invention;

Fig. 5 is a block diagram of the third embodiment of the present invention;

Fig. 6 is a block diagram of the fourth embodiment of the present invention.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENT

Referring to Fig1. 1,3, the fixed-web telephone 1 of the present invention is comprised of a cellular phone mounting base 10, a charger unit 13 (not shown), an incoming call detecting unit 12, a fixed-web phone/cellular phone switching unit 16, a

fixed-web phone circuit 17, an acoustic frequency signal amplifying unit 14, a phone picking up/hanging up device 15, a phone receiver 19 and a dialing unit 18.

The cellular phone mounting base 10 fixed to the main body of the fixed-web phone 1 is used for the placement and retaining of a cellular phone 3. Inside the cellular phone mounting base 10 is disposed a cellular phone signal receiving terminal 101 which can be engaged with a socket 301 of a cellular phone 3 so that signals and power of the fixed-web phone 1 and the cellular phone can be exchanged.

The charger unit 13 is used to supply electrical power to a battery of the cellular phone 3.

The incoming call detecting unit 13 is used to detect if an incoming call is received and intercommunication of a cellular phone is carried out so as to control the operational connection position of the fixed-web phone/cellular phone switching unit 16.

The fixed-web phone/cellular phone switching unit 16 is responsible for switching connection between a fixed-web communication or cellular phone communication via fixed-web telephone 1 and is subject to the control of the incoming call detecting unit 12.

The fixed-web phone circuit 17 serves to connect a circuit of the fixed-web telephone to a fixed-web network system so as to meet operational specifications of a

fixed-web telephone.

The acoustic frequency signal amplifying unit 14 is used to properly amplify the output or input acoustic frequency signals of a cellular phone.

The phone picking up/hanging up device 15 is used to detect if a phone is picked up or hanged up for deciding a phone being in use or not.

The phone receiver 19 is a means used to provide users at both ends of a phone line to send out and receive sound signals.

Thereby when the cellular phone 3 is placed inside the cellular phone mounting base 10 with the cellular phone signal receiving terminal 101 engaged with the socket 301 of the cellular phone 3, the cellular phone 3 is then connected to a fixed-web telephone 1. In a stand-by state, the battery of the cellular phone 3 is charged by the charger unit 13. When an incoming call is being received by the cellular phone 3, the incoming call detecting unit 12 checks if it is a cellular phone call and it is connected or not so as to control the fixed-web phone/cellular phone switching unit 16 to put the switch at points of A1, A2. If it is a phone call in a fixed-web network system, the switch is put at points of B1, B2. At the same time, the output and input acoustic frequency signals of the cellular phone 3 are amplified by the acoustic frequency signal amplifying unit 14. Then the amplified signals are converted into acoustic frequency signals meeting specifications of a fixed-web

telephone by way of the fixed-web phone circuit 17 whereby a phone call of a cellular phone 3 can be received by a fixed-web telephone 1.

The phone picking up/hanging up device 15 can control the connection of the system according to the detection of if the phone receiver is picked up (switched to C1, D1 connection points) or hanged up.

Referring to Fig. 4, another embodiment of the present invention is illustrated wherein the fixed-web phone 2 of the present invention is comprised of cellular phone mounting base 20, an incoming call detecting unit 22, a charger unit 23 (not shown), an acoustic frequency signal amplifying unit 24, a fixed-web phone/cellular phone switching unit 26, a fixed-web phone circuit 27, a dialing unit 28, a phone receiver 29, a phone receiver/hand free device switching unit 25, a hand free device circuit 211. When the fixed-web telephone or cellular phone is in operation, a user can use the phone receiver/hand free device switching unit 25 to optionally select either the phone receiver 29(connecting to points e1, e2) or the hand free device (connecting to points f1, f2) for carrying out a phone call operation. In case of the hand free device being used, the hand free device circuit 211 can supply a microphone MIC for voice input means and a speaker for voice output means.

Referring to Fig. 5, a third embodiment of the present invention is illustrated wherein the fixed-web telephone 4 of the present invention is comprised of

cellular phone mounting base 40, an incoming call detecting unit 42, a charger unit 43 (not shown), an acoustic frequency signal amplifying unit 44, a fixed-web phone/cellular phone switching unit 46, a fixed-web phone circuit 47, a dialing unit 48, a phone receiver 49, a phone receiver/hand free device switching unit 45, a hand free device circuit 411. It is identical to the second embodiment as shown in Fig. 4, and the only difference is that in Fig. 5, an additional cellular phone dialing and digital control code generating unit 412 is used. By switching the dialing operation of the dialing unit 48 to a cellular phone dialing operation, the cellular phone dialing and digital control code generating unit 412 will activate the cellular phone 3 to perform a dialing operation so that the dialing operation of a fixed-web telephone 4 can be converted to a dialing operation of the cellular phone 3.

A fourth embodiment of the present invention is illustrated in Figs. 2, 6, wherein the fixed-web phone 5 of the present invention has a cordless receiver 59 which is equipped with a RF receiving/transmitting circuit 591. The fixed-web telephone 5 is comprised of cellular phone mounting base 50, an incoming call detecting unit 52, a charger unit 53 (not shown), an acoustic frequency signal amplifying unit 54, a fixed-web phone/cellular phone switching unit 56, a fixed-web phone circuit 57, a phone receiver/hand free device switching unit 55, a hand free device circuit 511 and cellular phone dialing and digital control code generating unit

512. Those cited components work as those described in Fig. 5, the only difference is that an additional RF receiving/transmitting circuit 513 and an antenna 514 are adopted.

The feature of the fourth embodiment is that cordless receiver 59 can be used to receive a call transmitted to a cellular phone or can make a dial operation for a cellular phone. When a call to a cellular phone is being received and it is detected by the incoming call detecting unit 52, the fixed-web phone/cellular phone switching unit 56 is shifted to connect to points A1, A2. At the same time, the acoustic frequency signal amplifying unit 54 works to amplify the input and output acoustic frequency signals of the cellular phone 3, which are then selectively switched by the phone receiver/hand free device switching unit 55. In case of using the hand free device to receive a phone call, the hand free device circuit 511 will activate the microphone MIC, speaker SP to transmit acoustic input and output of a phone call. In case of using the cordless receiver 59 to receive a phone call, the RF receiving/transmitting circuit 513, antenna 514 can cooperate with the RF receiving/transmitting circuit 591 so as to enable a person to make a phone communication via the cordless receiver 59. Moreover, by way of dialing on a dialing unit 592 of the cordless receiver 59, the cellular phone 3 can be accordingly dialed simultaneously. This is done as a result of using the RF receiving/transmitting circuit 591 to issue dialing operation signal codes

which are received by the antenna 514 and the RF receiving/transmitting 513, then the cellular phone dialing and digital control code generating unit 512 will activate the cellular phone 3 to perform a dialing operation.

In summary, the present invention enables users of cellular phones to make phone calls in offices or in houses via fixed-web telephones (i.e. cable telephones) so that people can be better protected from bad influence of microwave produced in using cellular phones in one aspect and can make a standby cellular phone constantly charged in another aspect.

CLAIM

I claim:

1. A fixed-web telephone structurally adaptable for common use of cellular phones, comprising:

a cellular phone mounting base, a charger unit, an incoming call detecting unit; a fixed-web phone/cellular phone switching unit, a fixed-web phone circuit, an acoustic frequency signal amplifying unit, a phone picking up/hanging up device, a phone receiver and a dialing unit; wherein

said cellular phone mounting base fixed to a main body of the fixed-web phone is used for the placement and retaining of a cellular phone; inside said cellular phone mounting base is disposed a cellular phone signal receiving terminal which can be engaged with a socket of a cellular phone so that signals and power of said fixed-web phone and said cellular phone can be exchanged;

said charger unit is used to supply electrical power to a battery of said cellular phone in a standby state;

an incoming call detecting unit is used to detect if an incoming call is received and intercommunication of a cellular phone is carried out so as to control the operational connection position of the fixed-web phone/cellular phone switching unit;

said fixed-web phone/cellular phone switching unit is responsible for switching connection between a fixed-web communication or cellular phone communication via said fixed-web telephone and is subject to the control of said incoming call detecting unit;

said fixed-web telephone circuit serves to connect a circuit of said fixed-web telephone to a fixed-web network system so as to meet operational specifications of said fixed-web telephone;

an acoustic frequency signal amplifying unit is used to properly amplify the output or input acoustic frequency signals of said cellular phone;

said phone picking up/hanging up device is used to detect if a phone is picked up or hanged up for deciding a phone being in use or not;

said phone receiver is a means used to provide users at both ends of a phone line to send out and receive sound signals;

whereby a cellular phone can be operated in communication via said fixed-web telephone and a battery of said cellular phone can be charged when not used.

2. The fixed-web telephone structurally adaptable for common use of cellular phones as claimed in claim 1 wherein a phone receiver/hand free device switching unit, a hand free device circuit and cellular phone dialing and digital control code generating unit are used to permit a phone call to be received by way of a phone receiver or said

hand free device..

3. The fixed-web telephone structurally adaptable for common use of cellular phones as claimed in claim 1 wherein a cellular phone dialing and digital control code generating unit can convert a dialing operation on a dialing unit into a dialing operation on a cellular phone which is actuated to dial by way of said cellular phone dialing and digital control code generating unit.

4. The fixed-web telephone structurally adaptable for common use of cellular phones as claimed in claim 1, or 2 or 3, wherein an RF receiving/transmitting circuit, an antenna and a cordless receiver equipped with said RF receiving/transmitting circuit are used to receive a call transmitted to a cellular phone or can make a dial operation for a cellular phone.

The Patent Office
PATENTS • DESIGNS • COPYRIGHT • TRADE MARKS
INVESTOR IN PEOPLE

Application No: GB 0018451.5 13 **Examiner:** Robert Macdonald
Claims searched: 1-4 **Date of search:** 23 February 2001

Patents Act 1977
Search Report under Section 17

Databases searched:

UK Patent Office collections, including GB, EP, WO & US patent specifications, in:

UK Cl (Ed.S): H4L(LRAD, LRAX, LECCX, LECY)

Int Cl (Ed.7): H04B(1/38); H04M(1/72, 1/725); H04Q(7/32)

Other: ONLINE: WPI, PAJ, EPODOC

Documents considered to be relevant:

Category	Identity of document and relevant passage		Relevant to claims
X,E	GB 2348575 A	(SAGEM SA) See whole document	1, 3, and 4
X	EP 0849965 A1	(E-PLUS MOBILFUNK GMBH) See whole document.	1 and 4
A	WO 98/47300 A1	(CHEW) See whole document.	
X	WO 9417639 A	(NOVATEL) See whole document.	1
X	FR 2762739	(ELECTRONIQUE) See whole document.	1

X	Document indicating lack of novelty or inventive step	A	Document indicating technological background and/or state of the art.
Y	Document indicating lack of inventive step if combined with one or more other documents of same category.	P	Document published on or after the declared priority date but before the filing date of this invention.
&	Member of the same patent family	E	Patent document published on or after, but with priority date earlier than, the filing date of this application.